

CONNECTION DESIGN AND SONDE HOUSING ASSEMBLY FOR A DIRECTIONAL DRILL

Abstract

5 Drill stem elements and connections are shown with advantages such as
being mechanically robust. The absence of a side access window in a sonde housing
is one design feature that provides robust mechanical properties. Further advantages
of sonde housings include being easy to disassemble for access to the sonde unit, or
for insertion of the sonde unit. In one embodiment, a cap portion is easily secured or
10 removed using a small allen wrench, or a hammer and a punch. The cap portion is
not substantially affected or tightened by rotation of the drill stem during a drilling
operation. A further advantage includes the ability to remove cap portions and pull
back flexible product such as polyethylene pipe from a small exit pit.